

جامعة طرابلس / كلية تقنية المعلومات
الامتحان النصفى (اعادة) / لمادة التحليل العددي ITGS219



الزمن : ساعة ونصف

ربيع 2022

رقم القيد : اسم الطالب : المجموعة

1. Choose the right answer from the following::اختر الاجابة الصحيحة من الاتي::

- a. A list of all current variables with NO detail of the variables in Matlab can be obtained by entering the command:

(A) who (B) whos (C) roots

- b. a polynomial can be evaluated for a given value of x by the Matlab command.

(A) polyval (B) feval (C) function

- c. What is the output of the code: `>>A(2:3,1:3)` if the matrix A is: $A = \begin{pmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{pmatrix}$

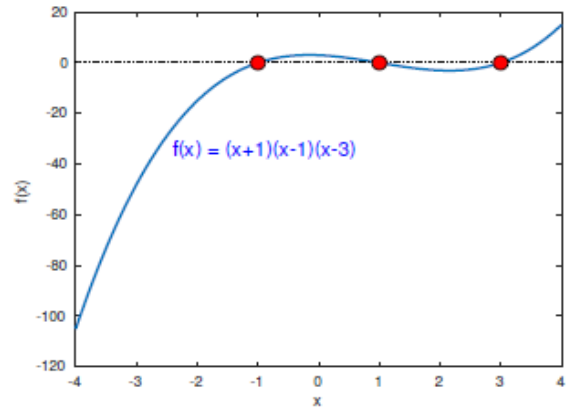
$\begin{pmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{pmatrix}$ $\begin{pmatrix} 1 & 2 & 3 \\ 7 & 8 & 9 \end{pmatrix}$ $\begin{pmatrix} 4 & 5 & 6 \\ 7 & 8 & 9 \end{pmatrix}$ $\begin{pmatrix} 2 & 3 \\ 5 & 6 \\ 8 & 9 \end{pmatrix}$

- d. Which command enables a title for the x-axis? اي امر يظهر عنوان محور السينات

a) xlabel() b) horilabel() c) xtital[] d) no command

- e. The function $f(x) = (x+1)(x-1)(x-3)$ is pictured in the plot. If the bisection algorithm is applied with initial interval $[-4; 4]$, how many roots of $f(x)$ will you be able to compute?

(A) 3 (B) 2 (C) 1
(D) none of the above



2. What is the output of the following codes?

1) What are the values of vector B and size(B) after the following?

<pre>>> x=3; y=2; z=1; >> y=f1(z,x); >> B=[x, y, z] >> size(B)</pre>	<pre>% f1.m function z=f1(x,y) z=x.^2+y./3; end</pre>	
--	---	--

2) What is the output of the next function if $a=[1 \ 2 \ 3 \ 4]$ and $x=0.5$?

<pre>function [f, fprime] = Cubic(a, x) f = a(1)*x.^3+a(2)*x.^2+a(3)*x+a(4); fprime = 3*a(1)*x.^2+2*a(2)*x+a(3);</pre>	
--	--

3. What is the output of the following commands? ما هي مخرجات هذه الاوامر

<pre>>> y = rem(5,3)</pre>	
Compute the relative error if the measuring length is 9999cm. and the true values are 10,000cm	
<pre>>> factor(30)</pre>	
<pre>>> r= 9:-3:0</pre>	
Write the polynomial for the coefficients vector is $c=[5 \ 0 \ -7 \ \frac{1}{2} \ 0 \ -3]$	
<pre>>> a = [1 2 3 10]; b = [4 5 6 90 80]; >> z= a./b</pre>	
<pre>>> x = -2:0.5:2.5; >> y = x(3:2:end/2+2)</pre>	

4. find the roots of the function $y = x^2 - x - 12$ for interval $[-5,5]$ By using drawing (sketching)

5. Find the root and number of iteration for the equation $2x^3 - 2x - 5 = 0$ with absolute error = 0.00001 and for interval $[1, 2]$. Consider $g(x) = [(2x + 5)/2]^{1/3}$.